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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,301	09/09/2003	Mark W. Lehnert	SXS-100-B	2135
7590 Thomas D. Heimholodt Young & Basile, P.C. Suite 624 3001 West Big Beaver Road Troy, MI 48084			EXAMINER CHUKWURAH, NATHANIEL C	
			ART UNIT 3721	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	DELIVERY MODE
3 MONTHS			01/03/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/658,301

Applicant(s)

LEHNERT ET AL.

Examiner

Nathaniel C. Chukwurah

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 8/14/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 and 30-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 and 30-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. In view of the reply brief filed on 8/14/2006, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

- (2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

2. A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:
3. A new ground of rejection is.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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5. Claims 1-28 and 30-47 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not describe how the central process “validates the fastener tightening process based solely on the signature of the fluid flow”.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 1-28 and 30-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. In claims 1 and 17, “validating a fastener tightening cycle process based solely on a monitored signature of fluid flow versus time” on lines 11-12, is indefinite because it is not clear what applicant is referring.

9. In claims 33 and 34, “validity without reference to an actual amount of torque applied to the fastener” on lines 8-9, is indefinite because it is not clear what applicant is referring.

10. In claim 40, “process validity based solely on the fluid flow signature versus time” on lines 9-10, is not clear what applicant is referring.

11. In claim 47, “validating a fastener tightening cycle process based solely on monitored signature of fluid flow versus time” on lines 2-3 is indefinite because it is not clear what applicant is referring.

***Claim Rejections - 35 USC § 102***

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1, 12, 33-35, 37-38 and 47-48 are rejected under 35 U.S.C. 102(b) as being anticipated by McKendrick (US 4,644,848).

With regard to claims 1 and 33-34, the reference of McKendrick discloses an apparatus (10) for controlling an impact tool comprising: an inlet port (36), a fluid pressure regulator (24, 28), a sensor (42) for measuring and generating output signal, a central processing unit (48) for receiving output signal from the sensor (42) which must be in accordance with a program stored in the memory of the microprocessor (48). McKendrick's reference does not expressly employ the language "validating" of the fastener tightening process per se.

McKendrick's reference does validate the fastener tightening process as disclosed in column 8, lines 5-26.

With regard to claim 12, McKendrick's reference further discloses an output port (34) for supplying controlled fluid.

With regard to claim 35, McKendrick includes means (central processing unit) for comparing fluid flow.

With regard to claim 37, McKendrick discloses an apparatus (10) for controlling an impact tool comprising: means (16, 24, 28 pressure regulator) for monitoring fluid to tool, means

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(control system) capable of determining tool process validity based on the monitored fluid that operates the tool.

With regard to claim 38, McKendrick includes central processor (48) for comparing monitored fluid flow.

With regard to claims 47 and 48, McKendrick's reference does not expressly employ the language "validating" of the fastener tightening process per se. However, the central processing unit (48 microprocessor) does validate tightening process as disclosed in column 8, lines 5-26.

### **Claim Rejections - 35 USC § 103**

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 4 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKendrick in view of Lysaght (US 6,055,484).

With regard to claims 2 and 8, the reference of McKendrick is silent about setup process for each fastener tightening cycle to be learned and performed.

Lysaght's reference teaches a setup process for each fastener tightening cycle to be learned and performed (see abstract).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to provide the program of McKendrick with setup process as taught by Lysaght for each fastener

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tightening cycle to be learned in order to determine when the output pressure precisely corresponds with the desired output pressure which has been called for by the computerized control (col. 2, lines 34-37).

With regard to claim 4, the modified McKendrick does not expressly state that the central processing unit receives a torque value input by a manual torque wrench.

McKendrick teaches manual pressure regulator (28) for initially reducing the pressure of fluid applied to the inlet of the transducer, therefore, McKendrick's central processing unit (48) is capable of receiving a torque value input by a manual torque wrench.

With regard to claim 9, McKendrick's reference shows that the central processing unit receives output signal from a sensor during tightening cycle, and capable of comparing output signal bench marks stored in memory (see col. 2, lines 30-41).

15. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKendrick in view of Lysaght as applies to claims 2 and 18, and further in view of Whitehouse (US 5,315,501).

With regard to claims 3 and 5, McKendrick reference discloses the central processing unit (48) which receives torque signal from transducer (16, 42).

McKendrick reference fails to show transducer connected between the tool and the fastener.

Whitehouse teaches a transducer (32 fig. 1) connectible between the tool (20) and the fastener (44) and capable of performing the functions as claimed.

Therefore, it would have been obvious to one having ordinary skill in the art to at the time of the invention to provide the apparatus of McKendrick with a transducer connectible

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between the tool and the fastener as taught by Whitehouse in order to provide the same benefit as discussed in Whitehouse.

16. Claim 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKendrick in view of Bickford et al. (US 4,864,903).

With regard to claim 10, McKendrick's apparatus lacks an error proofing program for each fastener tightening cycle.

Bickford et al.'s reference teaches an error proofing program for each fastener tightening cycle (col. 3, lines 33-35).

Therefore, it would have been obvious to one skilled in the art to provide the program of McKendrick with an error proofing program as taught by Bickford et al. for each fastener tightening cycle in order to obtain the significant advantages of faster operation of the wrench, eliminate or reduce operator error, more reliable and accurate operation of the wrench to impose the desired torque on the fastening element and ability to obtain a documented history of the tightening of the fastener (Bickford et al. col.3, lines 32-37).

With regard to claim 11, the modified McKendrick does not expressly state that the central processing unit receives output signal from a sensor during tightening cycle, and compares output signal bench marks stored in memory; however, McKendrick's reference is capable of comparing output signal bench marks stored in the memory (see col. 2, lines 30-41).

17. Claims 36, 39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKendrick (US 4,644,848) in view of Tambini et al. (US 5,592,396).



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With regard to claims 36, 39 and 41, the reference of McKendrick discloses the claimed subject matter but lacks a sensor for measuring corresponding flow of differential pressure.

Tambini et al.'s reference teaches a torque monitoring system (20) having a sensor (36) generating an output signal to measure flow of at least one of differential pressure (col. 5, lines 34-40).

Therefore, it would have been obvious to one skilled in the art to provide the apparatus of McKendrick with a sensor for measuring differential pressure in order to indicate when the condition of an impact tool changes (col. 6, line 3).

18. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over McKendrick in view of Whitehouse (US 5,315,501).

With regard to claim 16, McKendrick's reference fail to show transducer connected between the tool and the fastener.

Whitehouse teaches a transducer (32 fig. 1) connectible between the tool (20) and the fastener (44) and capable of performing the functions as claimed.

Therefore, it would have been obvious to one having ordinary skill in the art to at the time of the invention to provide the modified apparatus of McKendrick with a transducer connectible between the tool and the fastener as taught by Whitehouse in order to provide the same benefit as discussed in Whitehouse.

19. Claims 17-18, 20, 22, 24-25, 28, 30 and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by Tambini et al. (US 5,592,396).

With regard to claim 17, the reference of Tambini et al. discloses the method for controlling an impact tool including receiving pressurized fluid (col. 5, lines 14-15), maintaining a selectable pressure value (col. 5, line 21), measuring and generating output signal (col. 6, lines 1-2, 20-21), receiving output signal from the sensor (48 transducer), which must be in accordance with a program stored in the memory of the microprocessor (col. 6, line 51) and identifying a portion of the signal representative of the fluid flow rate during tightening process of the fastener, considered validation of the fastener tightening process (col. 6, lines 51-53).

With regard to claim 18, the method of Tambini et al. includes setup process for each fastener tightening cycle to be learned and performed (col. 13, line 15).

With regard to claim 20, the Tambini et al. includes the central processing unit receiving a torque value input by a manual torque wrench (col. 6, lines 61-64).

With regard to claim 22, the central processing unit of Tambini et al. includes the step of receiving output signal from a sensor (48) during a free air run process; and setting a threshold value (col. 7, lines 20-33) which will be based on the output signal (col. 8, line 61-63).

With regard to claim 24, the method of Tambini et al. a control program is run for each fastener tightening cycle (col. 7, lines 11-15).

With regard to claim 25, the method of Tambini et al. includes receiving output signal from a sensor (48) during tightening cycle, and compares output signal, which may represent signal bench marks stored in memory (see abstract).

With regard to claim 28, Tambini et al.'s reference further includes the step of supplying fluid flow through an output port and supply hose (see Fig. 1).

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With regard to claim 30, the method of Tambini et al. includes pressurized compressed air (col. 5, line 11).

With regard to claim 44, Tambini et al.'s reference teaches a torque monitoring system (20) having a sensor (36) generating an output signal to measure flow of at least one of differential pressure (col. 5, lines 34-40).

20. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tambini et al. in view of Bickford et al. (US 4,864,903).

With regard to claim 26, the Tambini et al. method lacks an error proofing program for each fastener tightening cycle.

Bickford et al.'s reference teaches an error proofing program for each fastener tightening cycle (col. 3, lines 33-35).

Therefore, it would have been obvious to one skilled in the art to provide the modified the program of the modified Tambini et al. with an error proofing for each fastener tightening cycle in order to obtain the significant advantages of faster operation of the wrench, eliminate or reduce operator error, more reliable and accurate operation of the wrench to impose the desired torque on the fastening element and ability to obtain a documented history of the tightening of the fastener (Bickford et al. col.3, lines 32-37).

With regard to claim 27, the method of Tambini et al. lacks an error proofing step.

Bickford et al.'s reference teaches an error proofing program for each fastener tightening cycle (col. 3, lines 33-35).

Therefore, it would have been obvious to one skilled in the art to provide the modified program of Tambini et al. with an error proofing for each fastener tightening cycle in order to obtain the significant advantages of faster operation of the wrench, eliminate or reduce operator error, more reliable and accurate operation of the wrench to impose the desired torque on the fastening element and ability to obtain a documented history of the tightening of the fastener (Bickford et al. col. 3, lines 32-37).

21. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tambini et al. in view of Whitehouse (US 5,315,501).

With regard to claim 32, Tambini et al. reference lacks the transducer connected between the tool and the fastener.

Whitehouse teaches a transducer (32 fig. 1) connectible between the tool (20) and the fastener (44).

Therefore, it would have been obvious to one having ordinary skill in the art to at the time of the invention to provide the apparatus of Tambini et al. with a transducer connectible between the tool and the fastener as taught by Whitehouse in order to provide the same benefit as discussed in Whitehouse.

***Allowable Subject Matter***

22. Claims 6-7, 15,19, 21, 23, 31, 40, 43, 45 and 46 are would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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***Response to Arguments***

24. Applicant's arguments with respect to claims 1-5, 8-14, 16-18, 20, 22, 24-28, 30-39, 41-42, 44, 47 and 48 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

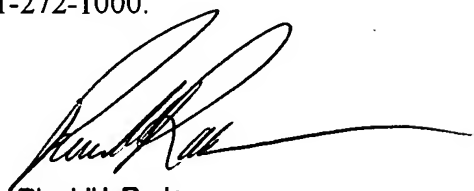
25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathaniel C. Chukwurah whose telephone number is (571) 272-4457. The examiner can normally be reached on M-F 6:00AM-2:30PM.

26. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rinaldi Rada can be reached on (571) 272-4467. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

27. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NC

December 8, 2006.

  
Rinaldi I. Rada  
Supervisory Patent Examiner  
Group 3700